

NY 2265

January 11, 1940.

Mr. Geddes Smith,
Commonwealth Fund,
41 East 57th Street,
New York City.

Dear Mr. Smith:

I am enclosing my biochemistry summary, as you requested, though I fear it will bore you exceedingly.

With regard to your letter, I do not think that information regarding antibodies is based wholly upon the circulating ones. Most of the work on anaphylaxis, the Schultz-Dale phenomenon of the sensitized uterus, the Seegals' work on sensitization of the eye, etc., indicates, I think, that tissue cells may contain substances which show the properties of antibodies (See also the Tissue Immunity abstracts in Section IX of the 3rd Int. Microbiological Congress volume). Perhaps Dr. Gay's chapter on Tissue Immunity in his "Agents of Disease and Host Resistance" would be of use to you if you have not already read it. Even if the circulating antibodies, especially after an infection, represent merely an excess, their function appears to be the same as ^{that of} any that might be anchored in the tissues, for these "excess" antibodies can protect other animals against infection or cure them. If an insufficient amount of antipneumococcus antibody is injected into a patient it disappears completely, showing that much antibody must be used up in an infection before it becomes demonstrable in the blood stream. In this case the patient takes it out of the blood to combat infection, and in the case of rabbit antibody this is often a very efficient process. In partial answer to your last question I have known pneumonia patients to recover, even though an excess of antibody was not given. In these cases there was certainly an antigen-antibody reaction, but no antibody was left over. In many cases, though, it would be extremely difficult to tell whether spontaneous recovery is actually accomplished by the antibodies produced locally in cells affected by the lesion, or whether antibodies were brought in from outside. And in many instances the connection of antibodies with recovery is uncertain.

I doubt very much whether potential resistance could be measured in terms of antibody titer -- the measure is merely that of a single factor, selected out of a large number because of the relative ease of measurement.

These are all very interesting and complicated questions, and much information on them is still needed. If you can stimulate even an occasional reader to take an effective interest in their solution, it will have accomplished a great deal.

It was a great pleasure to have your visit the other day.

With all good wishes,

Sincerely,

MH/m

Michael Heidelberg.